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DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, NORTHEAST
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
LESTER, PA 19113-2090

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IN REPLY REFER TO:

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October 27, 2004

Ms. Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section
USEPA Region 1
1 Congress Street, Suite 1100
Boston MA, 02114-2023

Dear Ms. Keckler:

SUBJECT: RESPONSE TO COMMENTS, FINAL WORK PLAN FOR BACKGROUND SOIL INVESTIGATION, STUDY AREA 08, NUSC DISPOSAL AREA, NAVAL UNDERWATER WARFARE CENTER, MIDDLETOWN, RHODE ISLAND

The Navy's responses to EPA comments on the subject Work Plan are provided as enclosure (1).

If you have any questions, please do not hesitate to contact me at (610) 595-0567 extension 142.

Sincerely,

CURTIS A. FRYE, P.E.
Remedial Project Manager
By direction of the
Commanding Officer

Enclosure: 1. Navy Responses to Comments from USEPA on the Final Work Plan for Background Soil Investigation, Study Area 08, NUSC Disposal Area (Comments of August 23, 2004)

Copy to:
P. Kulpa, RIDEM (w/encl)
C. Mueller, NSN (w/encl)
R. Machado, NUWC (w/encl)
J. Stump, Gannett Fleming (w/encl)
S. Parker, TtNUS (w/encl)

Response to EPA Comments to the
Final Work Plan for Background Soil Investigation
NUSC Disposal Area, SA08
Comments Dated August 23, 2004

1. General Comment: *EPA reviewed the revised Work Plan for a background soil investigation at the Naval Undersea Warfare Center (NUWC) Disposal Area (Study Area 08), at Naval Station Newport, Rhode Island. The revised report presents an expanded description of the approach that will be used for data evaluation and interpretation, and the statistical analysis that will be conducted upon completion of the data collection. Overall, EPA's previous comments have been adequately addressed. In particular, the Work Plan now includes a section (Section 5.3) that describes in detail the statistical approach for the future site-to-background comparison. The addition of this section is extremely helpful, as it clarifies the steps that will be taken to evaluate the site data relative to the proposed background data sets. While EPA agreed to 0.05 for the statistical analysis, it is important to correctly use the statistical test and keep the chemicals in the COPC list if the power of the test is not adequate to reject the null hypothesis. Detailed comments are provided in Attachment A.*

Response: Comment is noted. No response necessary

2. General Comment: *The Navy now proposes to collect a total of 60 background soil samples (20 hydric and 40 non-hydric locations), plus the requisite number of duplicates. In response to previous comments from EPA, the Navy has now included 20 sampling locations within the soil classified as Pittsdown silt loam (PmB), as well as 20 samples of the Stissing silt loam (Se).*

Response: Comment is noted, no response is necessary.

Page	Comment
3. p. 2-3, §2.1	*The third paragraph describes the two streams that enter the site, one from the north and the other from the southeast. In the text, the Navy suggests that the former may transport nutrients, fertilizers, and other chemicals from the golf course to the NUWC SA-08 site, while the latter may be carrying fertilizers and other agricultural chemicals from the property to the east-southeast. The stream on the north side of the site is no longer marked on the accompanying figures.*

Response: RIDEM will not consider samples from the golf course as background, therefore, this area and the inputs from this stream will not be considered in this data set.

4. p. 2-7, §2.2.1 *The second paragraph on this page notes that the stream entering the site from the southeast crosses a small area of soil that is designated Mansfield mucky silt loam (Ma). It is apparent from the current version of the Work Plan that Navy intends to sample this stream at locations between the area delineated as Ma and the SA-08 site boundary, and at locations that are upstream of the Ma soil (see Figure 3-1), but not from the portion of the stream traversing the area shown on this figure as Ma. Inasmuch as it is possible that the Ma soil type has contributed to sediments transported onto the site by this stream, the reason for omitting sampling of stream sediments in the region designated as Ma is not clear. Please explain these sample locations. Please consider collecting 10 sediment samples between the SA-08 site boundary and across the Ma soil area, with the remaining 10 stream samples in the stream entering the site from the northeast.*

Response: The Ma soil type is avoided particularly because we are focusing on the soil types of the site.

Enclosure (1)

5. p. 2-9, §2.2.4 *The second paragraph in this section provides the rationale for selection of areas to be sampled for the background investigation, based on historical information, maps, and aerial photographs. Area B (Fig. 2-4) was selected as the primary sampling area, presumably because it consists mainly of the Se type soils, with one area of PmB soil. (See previous comment regarding the apparent avoidance of the region designated as Ma.) Area C1 is identified as a secondary, or contingency, sampling area. It is apparent that approximately half of this area is designated as PmA soil, which does not appear to be related to any soils found at the SA-08 site, nor is it obvious how any soils from Area C1 could be transported to the site. Please explain the selection of Area C1 as a contingency sampling area for the background investigation.*

Also, it is apparent from this version of the Work Plan that the Navy intends to concentrate all of the PmB soil samples in a narrow strip adjacent to the Se soils in polygon "B" (Figure 2-4). By focusing all of the proposed 20 PmB samples within a relatively small area (as shown on Figure 3-1), the range of concentrations of COPCs that are characteristic of this soil type may not be accurately captured. In order to assess the natural heterogeneity expected within any soil type, please re-locate some of the PmB background samples to the appropriate regions of polygon "A" (i.e., the PmB soils to the north and west of the golf course).

Response: RIDEM will not consider samples from the golf course as background, therefore, this area will not be considered in this data set. The use of the C1 area as a contingency is unnecessary and is not anticipated.

6. p. 2-13, §2.2.6, third bullet *The text in the bullet provides an additional method to be used for comparing site data to background. The next to last sentence in this bullet discusses that the UTL test may be most appropriate for use with comparisons between hydric soils or sediment data where only 6 hydric soils and 3 underwater sediment samples are currently available for this site. Please clarify whether this report is using the terms "hydric soil" and "sediment" interchangeably. As summarized in Table 4-1, samples are planned only for background aqueous samples, sediment and soils with no discussion of hydric soil samples. Is the intent to use background sediment to results to compare to the on-site hydric soil samples? Is the intent to use the hydric soils to compare to site wetland soil? Comparison of stream samples to pond samples should be avoided. Please clarify the terminology being used in this section and throughout the document for the discussion of sediments, hydric soils, and wetland soils.*

Response: The use of the background samples taken from the stream area will be to compare to the samples taken at the wetlands at the site, and not to the pond samples. This will be made clear in the data report.

7. p. 5-3, §5.2, last ¶ *This paragraph discusses the p-level and test type to be used to compare to different background data sets to each other. This paragraph also alludes to the null hypothesis to be tested. First, in order to avoid future confusion, please provide a clear statement of the null hypothesis and the alternative hypothesis. Secondly, this paragraph states that the test will be run using a one-sided test with a p-level of 0.025. If the test is one-sided, then the use of a p-level of 0.025 would mean that the desired confidence limit is 0.975 which is an unusual confidence limit to select. Also, for the type of comparison proposed, the use of a two-sided test with a p-level of 0.05 (which is divided by two to account for the two tails of the distribution) and a confidence limit of 0.95 would be expected if the*

null hypothesis is Ho: mean$_1$ = mean$_2$. In conclusion, please verify the following: a) the null and alternative hypothesis, b) the desired confidence limit, and c) the desired p-level. Please include an equation.

Response: The comment above is presented on a section of the work plan that has already undergone review and comment. While the work plan would likely benefit from this information, we would prefer not to provide another revision if there is no disagreement on the overall plan for data collection and use.

8. p. 5-6, §5.3, ¶1 *This paragraph discusses the p-level and null hypothesis to be used to compare site data to background data. First, in order to avoid future confusion, please provide a clear statement of the null hypothesis and the alternative hypothesis. The proposed p-level of 0.05 is acceptable but it is important to know whether the test is considered to be a one-sided or two-sided test. In developing a clear statement of the null hypothesis, the type of comparison (one-sided or two-sided) should be specified.*

Response: Comment is noted. Please refer to the response to comment No. 7 above.

9. p. 6-2, §6.0 *The last bullet in this section indicates that the soil background investigation report will include an appendix containing individual sample results for "...all chemical contaminants consistently detected in the background soil samples..." Please ensure that this appendix will contain all analytical results, including those for parameters with values that were non-detects, as well as their respective detection limits.*

Response: The report will provide all the data results, including non-detects with the detection limits as requested.

Enclosure (1)